Carbon Offsets Markets and the Climate Action Reserve

CLIMATE ACTION RESERVE

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Presentation overview

CLIMATE ACTION RESERVE

1. Climate change regulation
2. Carbon offsets
3. Carbon markets
4. Overview of the Reserve
5. Examples

Before we get started…

- GHGs: Persistent, global atmospheric pollutants that trap outgoing IR radiation
- Six Kyoto Protocol gases

CO_2 CH_4 N_2O SF_6 PFC HFC

- Global warming potential normalizes each gas to the effects of CO_2 over 100 yrs

(1 methane = 21 CO_2e)

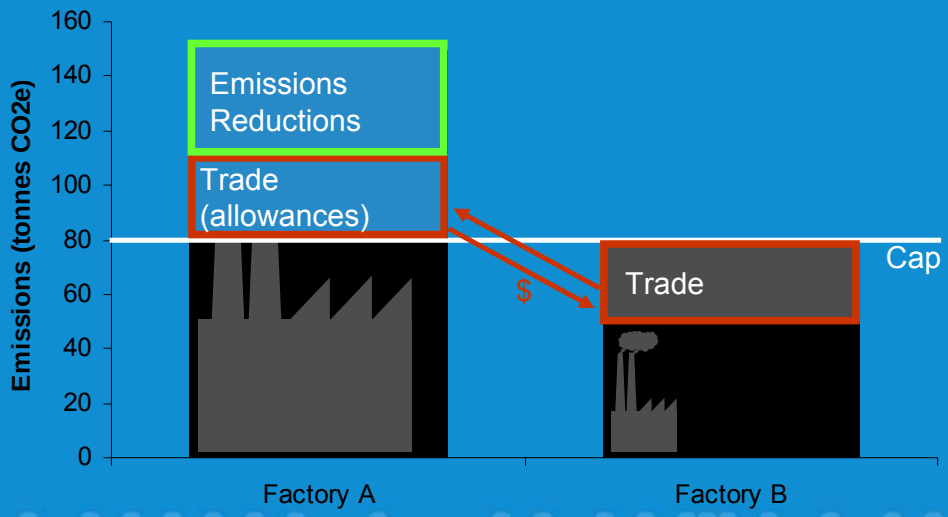
Carbon markets

What: CO_2e → Offsets, allowances, RECs

Who & Why → Voluntary market
→ Compliance market

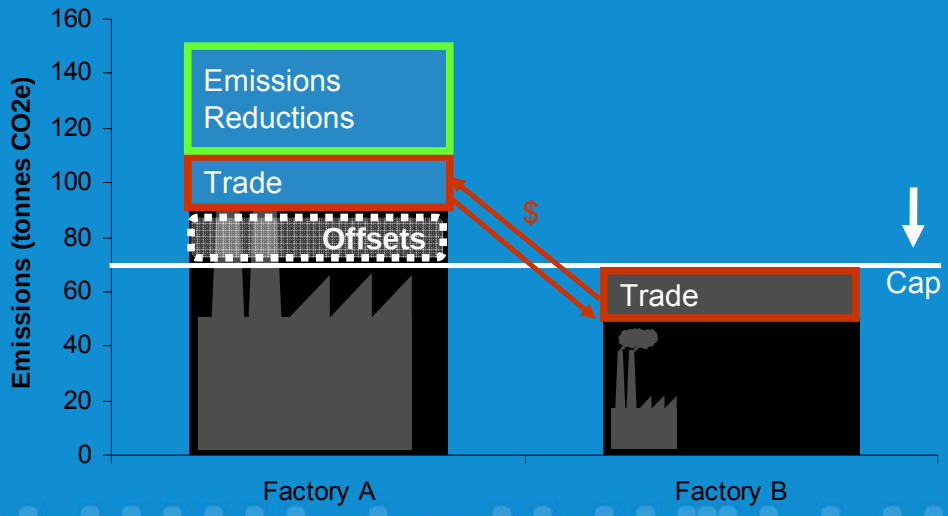
How → Exchanges
→ Registries

Cap and trade



Offsets for compliance

Cap and trade with offsets



Current & future regulation

- AB32
- Western Climate Initiative (WCI)
- Regional Greenhouse Gas Initiative (RGGI)
- Federal regulations (Markey-Waxman in the House, Kerry-Boxer in the Senate)
  - Both allow for offsets

Carbon offsets

- One emitter pays another to either reduce emissions or sequester carbon
- Net reduction in anthropogenic atmospheric GHGs
- Fill regulatory gaps
- Lower overall costs
- 1 CRT = 1 MT CO2e

Voluntary offset market

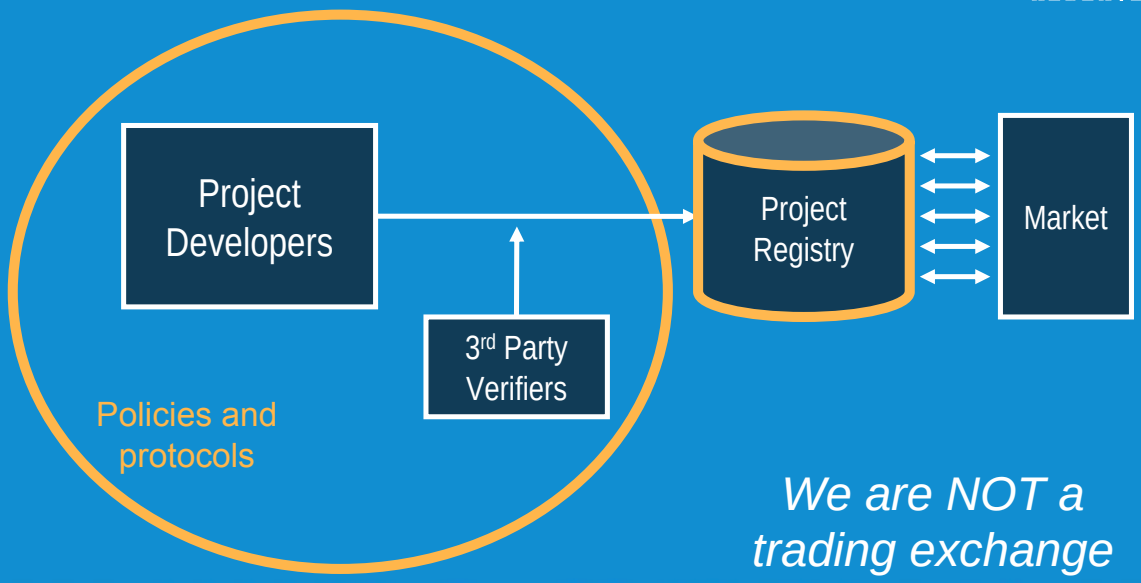
Accounting principles

- **Real**: Reductions have actually occurred and are quantifiable
- **Additional**: Reductions would not happen without a GHG market
- **Verifiable**: Emission reports must be verified by independent 3rd party
- **Permanent**: Reductions verified ex-post, risk of reversals mitigated

Also…

- **Owned unambiguously**: Ownership of GHG reductions is clear
- **Not harmful**: Negative externalities must be avoided
- **Practical**: Project implementation barriers should be minimized

What we do



We are NOT a trading exchange

History of the Climate Action Reserve

- Founded as the California Climate Action Registry by state legislation in 2001
  - Encourage voluntary reporting and reductions
  - Develop protocols to track GHG emissions and reductions

Objectives of the Climate Action Reserve

- Address public concerns about the voluntary carbon market that:
  - Projects aren't additional
  - Credits are being double counted or sold
- Our reputation for high-quality accounting standards can address these concerns
  - Show that carbon offsets can be a useful tool in addressing climate change
- Intended to be the premier place to register carbon offset projects for North America
  - Be the recognized "seal of approval"

Recognition and support

- California Air Resources Board
- State of Pennsylvania
- Voluntary Carbon Standard (VCS)
- Leading environmental organizations:
  - Environment America
  - Natural Resources Defense Council (NRDC)
  - Union of Concerned Scientists
  - Sierra Club
  - Wilderness Society

Transparency

- Unparalleled transparency makes the Reserve unique
- Public reports include:
  - All protocols
  - List of all account-holders
  - List of all projects and all project documents
  - List of all issued CRTs for every project
  - All retired CRTs

Performance-based standards

- Why a performance standard is different
  - The hard work is upfront
  - Assess industry practice as a whole, rather than individual project activities
- Less subjective determination to qualify
- More certainty in amount of credits
- Lower risk for developers
- Faster project processing

Separation of roles

- Reserve develops protocols but does not develop projects
- Does not take ownership of offsets
- 501(c)3 non-profit status
- Third-party verification
  - Consistent with international standards
  - Accreditation done by ANSI
  - Conflict of interest analysis on every project

Linking voluntary and compliance markets

- For now, main demand is from the voluntary market
- In the future, projects may be usable for compliance in California, Western Climate Initiative or federally
  - Regulators have yet to make decisions on these questions
  - The Reserve "is considered the premier pre-compliance offset standard." (*State of the Voluntary Carbon Markets 2009)*

Our project protocols

- Include eligibility, quantification, monitoring, metering, verification
- Developed with broad public input
- Goal is to create a uniform standard that is widely recognized and builds on best practice
  - We incorporate the best elements of other protocols
  - We do not accept protocols from other programs (i.e. CDM, Gold Standard, VCS, CCX, etc.)

Protocol development process

1. Literature review
2. Scoping/kick-off meeting
3. Multi-stakeholder workgroup formation
4. Draft protocol to workgroup
5. Revised draft released for public comment
6. Public workshop
7. Adoption by Reserve board in public session
   - It is unique for a non-profit Board to meet in public
8. Adoption by California Air Resources Board in public session

Existing protocols

- Forestry
  - Improved forest management
  - Avoided conversion
  - Reforestation
- Landfill gas capture (US & Mexico)
- Livestock methane capture (US & Mexico)
- Urban forestry
- Coal Mine Methane
- Organic Waste Digestion

Landfill protocol

- Eligibility
  - **Location**: US or Mexico
  - **Start date**: no more than 6 months before submittal (different in Mexico)
  - **Regulatory test**: no mandate for methane destruction
  - **Performance standard**: active gas collection and destruction (on-site or off-site) above BAU
  - **Compliance** with applicable environmental regulations
- 10 year crediting period
- Similar to other methane protocols

Forest project protocol

1. Reforestation
   – Out of forest cover for 10 yrs
2. Improved forest management
   – Increased carbon above modeled baseline
3. Avoided conversion
   – Prevent imminent deforestation of site

- 100 year commitment to maintain standing live carbon stock

Protocols under consideration for 2009

Agriculture and Biological Sequestration
- Composting
- Soil sequestration
  - Cropland
  - Rangeland
  - Biochar
- Mexican forestry

Industrial Processes
- Boiler efficiency
- Ozone depleting substances*
- N_2O from nitric acid plants*
- Natural gas T&D systems

Transportation
- Truck stop electrification

** In-progress*

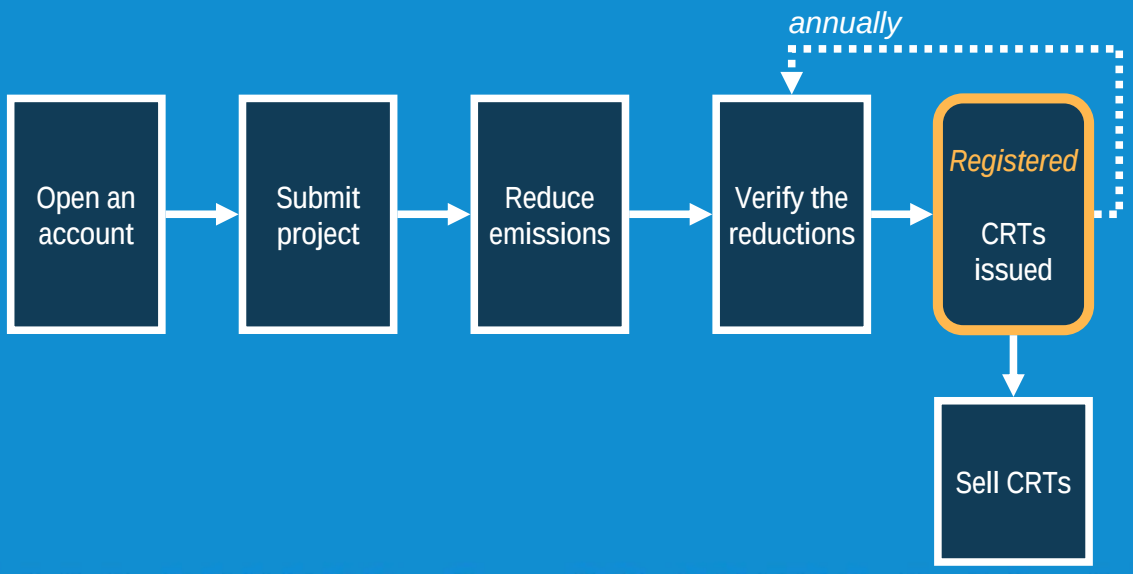
Renewable energy and energy efficiency

- No renewable energy protocol is planned in US
  - You may be able to generate RECs through other programs from methane destruction projects if you are generating electricity
- No electrical energy efficiency/green building protocols are planned
  - This is only for electricity. We are planning a natural gas efficiency protocol
- Why? Electricity is certain to be a capped sector under any GHG regulation

Steps to eligibility

1. Location – U.S. (and its territories) or Mexico (specific protocols)
2. Project submitted within 6 months of start date
   - 8/15/08 for Mexico
   - Exceptions for some protocols
3. Regulatory screen – not legally required
4. Performance standard for additionality
5. Compliance – must meet all applicable environmental regulations

The Reserve process



Steps to register a project

1. Open an account on the Reserve
2. Submit project for listing
   - Project submittal form and documents
3. Conduct project activities
4. Select verifier
5. Carry out project verification
6. Submit verification report and opinion
7. Project registered and CRTs issued

Independent verification

- Accreditation of verifiers is done by ANSI with Reserve oversight and training
- Conflict of interest analysis for each verification
- Verifier confirms project eligibility and the quantity of credits for the reporting period
  - Report and opinion submitted to the Reserve
- At least annually for methane projects
  - Minimum every 6 years for forestry

Fee Structure

- Account Maintenance: $500/year
- Project Listing: $500/project
- CRT Issuance: $0.20/tonne
- CRT Transfer: $0.03/tonne
- Retirement: Free

Website demo

www.climateactionreserve.org

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Submitted projects

- 14 Forests
  - Highly variable credit issuance
- 32 Livestock manure digesters
  - Average 5,000 CRTs annually
- 84 Landfills
  - Average 50,000 CRTs annually

Projects near Dallas

- McKinney Landfill (Dallas)
  - Montauk Energy Capital
- Camelot Landfill (Lewiston)
  - Blue Source
- Denton Landfill (Denton)
  - DTE Biomass Energy
- Greenwood Farms Landfill (Tyler)
  - East Texas Renewables

McKinney Landfill

- Opened 1968, closed 2008
  - *Owner*: North Texas Municipal Water District
  - *Project Developer*: Montauk Energy Capital
- Non-NSPS
  - NMOC emissions 41 Mg/yr
- Flare installed 6/08, operational 8/08
  - No prior collection system
  - Plans for electricity generation
- 28,176 CRTs issued so far, vintage 2008

Listed & registered projects

Current Statistics

CLIMATE ACTION RESERVE

- Reserve launched: **May 2008**
- Account-holders: **155**
- Total submitted projects: **132**
  - Located in **35** states
- CRTs issued: **~1.68 million**
- Recent average price: **$6.80/tonne**
  - According to ***New Carbon Finance, Voluntary Carbon Index***, July 2009

Future

- New project types
- Expanded geography
- State, regional, and/or national compliance markets

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